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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,165	07/30/2003	Manfred Fuchs	P03,0292	7642

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EXAMINER

LIN, JAMES

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/630,165

Applicant(s)

FUCHS ET AL.

Examiner

Jimmy Lin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed 7/24/06 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The amendment to the paragraph beginning at page 4, line 14 adds new matter. The Applicant has changed the recitation of “the ratio...can be reproduced...between a factor of 0.4 and 1.2” to recite “the ratio...is between 0.4 and 1.2”. The use of “reproduced” was indefinite and the specification did not explain the meaning of “reproduced”. The amendment changes the meaning of the specification without support for such an amendment because the specification gives no clear indication that the phrase “can be reproduced...between a factor of 0.4 and 1.2” means “is between 0.4 and 1.2”.

The paragraphs beginning at page 5, lines 24 and at page 6, line 15 have been amended to recite “wherein A is at least one alkali metal from the group consisting of Na, K, Rb and Cs”. However, the examples do not fully support the amendment because examples a-o only demonstrate wherein A is Cs, Rb/Cs, or Rb. The examples do not support, for example, wherein A is Na/K or Na/K/Rb/Cs.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

2. Claims 1 and 6-7 are objected to because of the following informalities:

The recitation of “a carrier” (claim 1) should be changed to “a substrate”.

The recitation of “a group consisting of” (claim 6, line 2; claim 7, lines 4-7) does not use the proper wording for Markush claims. Therefore, “a group” should be changed to “the group”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites "to produce a ratio of an Eu concentration of the alkali halogenide layer in the proximity of the substrate to an Eu concentration of the alkali halogenide layer in the proximity of the substrate between 0.4 and 1.2". However, the amendment to the specification in the paragraph beginning at page 4, line 14 introduces new matter. Therefore, the recitation is not supported in the specification, as discussed above.

Claim 7 recites "wherein A is at least one alkali metal from a group consisting of Na, K, Rb, and Cs". However, the amendments to the specification in the paragraphs beginning at page 5, lines 24 and at page 6, line 15 introduces new matter. Therefore, the recitation is not supported in the specification, as discussed above.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Hell et al. (US 2003/0091729) as supported by the evidence of inherency included in "Preparation and Vaporization Thermodynamics of Europium Oxide Bromides" (Haschke et al.) and the admitted prior art.

7. Regarding claim 1, Hell et al. teaches a method of manufacturing a stimuable phosphor by mixing CsX (i.e., an alkali halogenide) and EuOX, wherein X represents a halide, and depositing the mixture on a substrate by vapor deposition (paragraphs 40 – 42). In EuOX, the oxygen atom and the halide have a total charge of -3 . The europium atom must have a valence state of three in order to provide a $+3$ charge. Thus, EuOX is an europium(III) oxyhalogenide.

Hell et al. teaches that “it is beneficial to have the phosphor crystal deposited as some kind of piles, needles, tiles, etc.” (paragraph 6, lines 2 – 4), and “the phosphor temporarily stores energy contained in the X-ray radiation pattern” (paragraph 3, line 6 – 7). By definition, a phosphor is a substance that emits light following absorption of radiation. Thus a phosphor reads into a luminophore. Therefore, Hell et al. anticipates a method of vapor-depositing a layer of a needle-shaped x-ray luminophore and co-vaporizing a mixture of an europium(III) oxyhalogenide and an alkali halogenide.

The ratio of an Eu concentration of the alkali halogenide layer in the proximity of the substrate is 1 when compared to the same location in proximity of the substrate.

8. Regarding claim 4, the Applicant teaches that using EuOBr as the starting material creates non-uniform Eu concentrations within the deposited layer in proximity to the substrate (pgs. 2-3). The claim is open to comparing the Eu concentration at any two points in proximity to the substrate. Therefore, the non-uniform layer of Hell et al. would necessarily create at least two different Eu concentrations within the deposited layer that have a ratio between 0.6 and 0.8 with respect to one another.

9. Regarding claim 5, Haschke et al. teaches that $\text{Eu}_3\text{O}_4\text{Br}$ forms upon heating of EuOBr and that the $\text{Eu}_3\text{O}_4\text{Br}$ formed is a solid or liquid, depending on whether the EuOBr is a solid or liquid (equations 3 and 4 on page 4552). The process of heating is provided as the energy source in vaporization. EuOBr can be established as an europium(III) oxyhalogenide for the reasons above. $\text{Eu}_3\text{O}_4\text{Br}$ is included in the formula of $\text{Eu}_3\text{O}_4\text{Hal}$, where Hal is at least one halogenide from the group consisting of F, Cl, Br, and I. Thus, $\text{Eu}_3\text{O}_4\text{Br}$ is inherently formed in the method of vaporizing EuOBr, and in turn $\text{Eu}_3\text{O}_4\text{Br}$ is co-vaporized with the alkali halogenide in the process of Hell et al.

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10. Regarding claim 6, CsX is an alkali halogenide comprising of at least one metal from the group consisting of Na, K, Rb and Cs and at least one halogenide from the group consisting of F, Cl, Br and I. }

11. Claims 1 and 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Leblans et al. (US 6,512,240) as supported by the evidence of inherency included in "Preparation and Vaporization Thermodynamics of Europium Oxide Bromides" (Haschke et al.).

12. Regarding claim 1, Leblans et al. teaches a method of manufacturing a photostimulable phosphor screen by firing a mixture of CsX and EuOX, wherein X represents a halide, and depositing the mixture on a substrate by vapor deposition (column 7, lines 46 – 50). In EuOX, the oxygen atom and the halide have a total charge of –3. The europium atom must have a valence state of three in order to provide a +3 charge. Thus, EuOX is an europium(III) oxyhalogenide.

Leblans et al. teaches that this method of preparation allows for the phosphor to deposit in the form of needle-shaped crystals (column 7, lines 56 – 58). By definition, a phosphor is a substance that emits light following absorption of radiation. Thus a phosphor reads into a luminophore. Therefore, Leblans et al. anticipates a method of vapor-depositing a layer of a needle-shaped x-ray luminophore and vaporizing a mixture of an europium(III) oxyhalogenide and an alkali halogenide.

13. Regarding claim 4, the Applicant teaches that using EuOBr as the starting material creates non-uniform Eu concentrations within the deposited layer in proximity to the substrate (pgs. 2-3). The claim is open to comparing the Eu concentration at any two points in proximity to the substrate. Therefore, the non-uniform layer of Leblans et al. would necessarily create at least two different Eu concentrations within the deposited layer that have a ratio between 0.6 and 0.8 with respect to one another.

14. Regarding claim 5, Haschke et al. teaches that $\text{Eu}_3\text{O}_4\text{Br}$ forms upon heating of EuOBr and that the $\text{Eu}_3\text{O}_4\text{Br}$ formed is a solid or liquid, depending on whether the EuOBr is a solid or liquid (equations 3 and 4 on page 4552). The process of heating is provided as the energy source in vaporization. EuOBr can be established as an europium(III) oxyhalogenide for the reasons above. $\text{Eu}_3\text{O}_4\text{Br}$ is included in the formula of $\text{Eu}_3\text{O}_4\text{Hal}$, where Hal is at least one halogenide

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from the group consisting of F, Cl, Br, and I. Thus, $\text{Eu}_3\text{O}_4\text{Br}$ is inherently formed in the method of vaporizing EuOBr , and in turn $\text{Eu}_3\text{O}_4\text{Br}$ is co-vaporized with the alkali halogenide in the process of Leblans et al.

15. Regarding claim 6, CsX is an alkali halogenide comprising of at least one metal from the group consisting of Na, K, Rb and Cs and at least one halogenide from the group consisting of F, Cl, Br and I.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leblans et al. '240 in view of Goodman et al. (US 5,904,781). (The previous Office Action had indicated that Hell et al. does not teach a molybdenum vaporizer, while the statement of rejection cited Leblans et al. It is clear that the Examiner had intended to indicate that Leblans et al. does not have such a teaching. Thus, this typographical error has been corrected.)

Leblans et al. does not disclose a molybdenum vaporizer. Goodman et al., however, teaches that molybdenum evaporator heating boat elements are inert to hot phosphor constituents. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a molybdenum vaporizer, which is inert to hot phosphor constituents.

One would have been motivated to do so by the expectation of achieving a material of construction that does not react with the constituents.

Response to Arguments

19. Applicant's arguments filed 7/24/06 have been fully considered but they are not persuasive.

The Applicant notes that the subject matter of claim 3 has been embodied in independent claim 1. The Applicant then argues that since no prior art was applied against claim 3, the claims are in condition for allowance. However, the limitations of claim 3 are different from that of amended claim 1, and such amendments introduce new matter, see discussion above. Claim 1 has been rejected with prior art, as well as under 35 U.S.C. 112.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Thursday 8 - 5:30 and Friday 8 - 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER